Washington Park Arboretum

BULLETIN

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Washington Park Arboretum

The Arboretum is a 230-acre dynamic garden of trees and shrubs, displaying internationally renowned collections of oaks, conifers, camellias, Japanese and other maples, hollies and a profusion of woody plants from the Pacific Northwest and around the world. Aesthetic enjoyment gracefully co-exists with science in this spectacular urban green space on the shores of Lake Washington. Visitors come to learn, explore, relax or reflect in Seattle's largest public garden.

The Washington Park Arboretum is managed cooperatively by the University of Washington Botanic Gardens and Seattle Parks and Recreation; the Arboretum Foundation is its major support organization.

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ABOVE: Bainbridge Island's IslandWood is a 255-acre complex of "outdoor classrooms" that teaches kids how to connect to the the environment and each other. Read about IslandWood's childrens' programs beginning on page 15. (Photograph courtesy of IslandWood)

ON THE COVER: Each winter, rainbirds from the Pacific Northwest flock to Hawaii to enjoy the sun and tropical plants: Here bromeliads climb the trunk of a strawbeery guava (*Psidium littorale*) in the Hawaii Tropical Garden on the island of Hawaii. For more views of Hawaiian gardens open to the public, turn to page 3. (Photograph by Steve Whitner)

Respite and Renewal

"You must love working in the Arboretum," acquaintances frequently say to me. "It is so peaceful there." And so it is. It is a wonderful place of respite and renewal. Most of the time. For our visitors.

But for those of us who go to work here, the usually fast pace seems only to be punctuated by periodic frenzies of activity. The usual rhythm of presentations, fundraising activities, office work, and meetings of all kinds is kicked into overdrive as we produce a big plant sale, display garden, gala, or celebratory party and mobilize all our volunteer and staff resources to pull off the big event. With our recent work on strengthening our basic organization and developing a new strategic plan added in, tranquility has been in short supply and we have sometimes felt almost as bedraggled as last summer's annuals.

So, it has been a great gift to go away for ten days. I have gone to give some help to my brother in the Bay area—and stopped to stroll through the Australia and New Zealand gardens in the Strybing Arboretum. Bottle flowers covered the various banksia shrubs and I imagined what ours in Pacific Connections will look like someday soon.

And, I have been back to spend Thanksgiving on eastern Long Island with my family. I walked the beach on Fire Island as I have always loved to do. It was a chill day when the sun shone and the wind blew half a gale and so I admired the dune grasses and stubby scrub pines as they tossed in the wind. How unlike the landscape of dark, towering conifers at the Arboretum.

I even went for a ride in Dad's 1931 Model A roadster, the one he has owned since he was a teenager and it was a nine year "old" car. Ah, yes, just like the Model As that have been with us to celebrate the 75th anniversary of the Arboretum this year.

At each stop there was time for renewal and reflection: to give thanks for time with family and the birth of my new granddaughter this fall; to think about all that has been accomplished this year and to feel a new sense of enthusiasm and energy for getting back to hear Dr. Wott's presentation on the Arboretum's history at our 75th anniversary party; to dive into the preparations for the Flower and Garden Show and finishing the Gateway to Chile campaign and planting it this fall. Yes, there is so much to do and look forward to in the new year.

And, I vow, I must find some time each day to walk in the Arboretum to sustain this sense of rejuvenation and peace.

Cheers to you all,

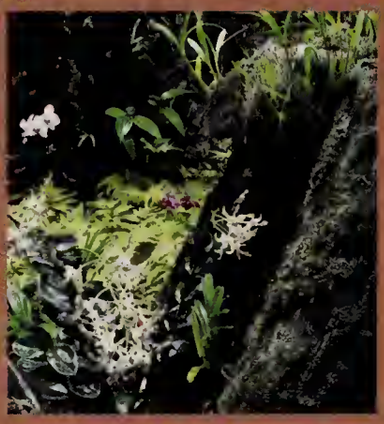
Paige Miller

Paige Miller, Executive Director,
Arboretum Foundation

Four Hawaiian Gardens:
AN ARMCHAIR TOUR

Each Hawaiian island has a unique topography, weather pattern and soils, but they all are alike in possessing spectacular gardens that are open to the public. Take a visual tour of four gardens, spread across two islands, that are well worth visiting if you make a trip to our 50th state.

ABOVE AND FOLLOWING PAGE: ***Big Island—Hawaii Tropical Botanical Garden***. A 40-acre valley that features a stream, waterfalls and a dramatic ocean coastline, along with 2000 species of tropical trees and plants. Visit: www.hawaiigarden.com.



ABOVE: ***Big Island—Roadside Garden.*** Located on Route 11 between Mountain View and Volcano Village, this whimsical patch of a garden uses lush tropicals to ornament its sculptures.

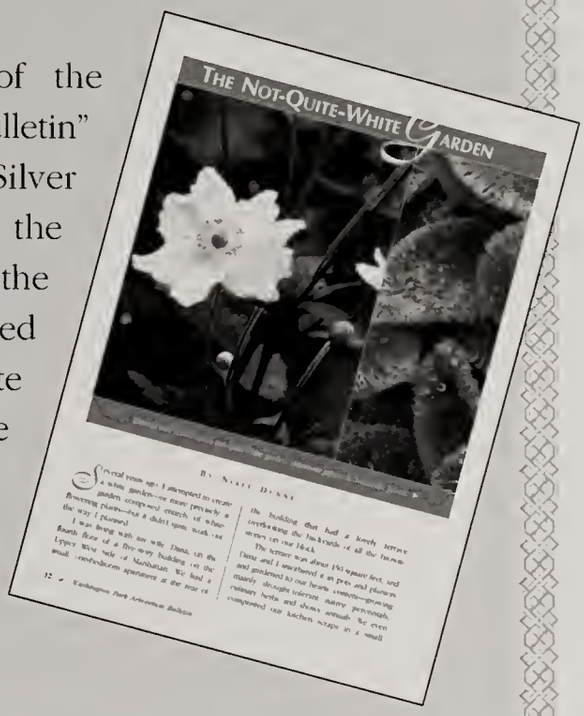
ABOVE: ***Kaua'i—McBryde Gardens at the National Tropical Botanical Garden.*** This 259-acre enclave features palms, orchids, herbs and spices, a large collection of poisonous plants, rare and endangered species in need of conservation, and mature examples of major Hawaiian and tropical tree species, all set in grounds featuring a shaded stream, a sweeping "meadow" and trails through native forests. Visit: www.ntbg.org.

THIS AND FOLLOWING PAGE: ***Kaua'i—Hindu Temple and Garden.*** A 51-acre site that includes forests, waterfalls and lotus ponds; guided tours take visitors through garden areas that display orchids, heliconias, palms, water plants and trees and shrubs used in ayurvedic treatment programs. In the middle of the site is a partially built stone temple, complete with intricate, traditional carvings and a dome gilded with gold-leaf. Visit: www.himalayanacademy.com.

Kaua'i—Hindu Temple and Garden

CONGRATULATIONS NIALL!

Niall Dunne, communications manager of the Arboretum Foundation and member of the "Bulletin" Editorial Board, has received the 2009 Silver Award of Achievement for Writing in the Newsletter/Bulletin/Brochure category from the Garden Writers Association. Niall was awarded the honor for his article, "The Not-Quite-White Garden," published in the Summer 2008 issue of the "Bulletin." Congratulations Niall!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Ten Trees of Belize

TEXT AND PHOTOGRAPHS
BY JANINE ANDERSON

Belize is a small country with a rich cultural history and a wide array of flora, fauna and landscapes. Located in Central America, Belize borders Mexico's Yucatan Peninsula to the north, Guatemala to the west and south, and 200 miles of Caribbean seacoast to the east. Although it is about the size of New Hampshire, Belize boasts the wide diversity of flora typically found in tropical forests. It has some of the most extensive tracts of primeval rainforest in Central America, and over 40 percent of the country has been preserved as park, reserve or forest.

More than 750 species of trees can be found in its numerous habitats, which include rainforest, pine forest, savanna, marsh and mangrove—and new species of trees still are being discovered in them. These habitats also support nearly 600 species of birds, including ones that spend summers in, or migrate through, the Pacific Northwest, such as the western tanager and green-winged teal. The variety of mammals in Belize includes monkeys, jaguars and anteaters. Among its delicate eco-systems are the longest barrier reef in the Western Hemisphere and the Maya Mountains, with peaks exceeding 3500 feet in elevation.

With only about 250,000 inhabitants, the population density of Belize is the lowest in Central America. In addition to the indigenous

RIGHT: A grove of red mangroves (*Rhizophora mangle*) on Belize's Caribbean coastline.

BELOW: Bayleaf (*Sabal mauritiiforme*)

Maya, other major ethnic groups include Creole, Mestizo, Garifuna and East Indian. Although English is the official language, Maya dialects, Spanish and Creole are also commonly spoken.

Significance of Belizean Trees

The trees of Belize have been important to Maya civilization since it emerged around 2000 BCE. The Maya have used trees for constructing homes and for making tools, foods, dyes and paper. Trees also offer shade in open areas and homes to forest fauna. Today Belizeans continue to use native flora for a variety of purposes, including making traditional medicines.

The plundering of trees by outsiders has changed the course of Belizean history. In the 1600s, British woodcutters (baymen) began harvesting logwood (*Haematoxylum campechianum*) found along the coast. Logwood contains haematoxylin, which was used for dying woolens in the expanding European textile industry of the day. In the early 1700s, African slaves were brought from Jamaica and Bermuda to cut wood. The slaves were emanci-

pated in 1838, and their descendants make up the present-day Creole population.

In the late 1700s, trade in mahogany (*Swietenia macrophylla*)—now the national tree of Belize—overtook that of logwood, and the slave trade expanded as more workers were needed to cut down the trees. This beautiful wood, which is resistant to rot and insects and easy to work with, has many uses, including furniture, cabinet making, trim, panels, veneers, boat building and carving. Mahogany exports were the mainstay of the economy until the 1950s. In 1862 this area became a British colony under the name British Honduras; it was renamed Belize at independence in 1981.

— Featured Species —

Described here are ten noteworthy trees found in the tropical forests of Belize:

Ceiba—An iconic tree in Maya culture, this pan-tropical species grows throughout Central America from Mexico to Brazil and is the national tree of Guatemala. It was cultivated by the ancient Maya and revered as the Sacred Tree of Life. They called it *Yaaxche* and believed it connected—and balanced power between—the gods of the underworld and those above. Its large, umbrella-like crown symbolized the upper world, the plank-like, buttressed trunk represented the terrestrial living world and the roots penetrated into the underworld.

The ceiba is in the family Malvaceae, which includes genera widely cultivated in Northwest gardens, such as *Fremontodendron*. *Ceiba pentandra* grows to seven feet in diameter and 200 feet tall, rising far above the forest canopy. The timber is too soft to use in construction, but the long straight trunks are carved into dugout canoes. Solitary specimens at Maya sites, such as Caracol in western Belize, can contain an entire ecosystem of airborne gardens full of orchids, fern and mosses, along with the hanging nests of oropendolas—large, blackish birds with long, dagger-like bills and yellow tails.

Give-and-take palm (*Chryosophyla stauracantha*)

Also called the cotton tree, the ceiba's brown seed pods contain cottony, water-repellent fibers (called kapok) that are excellent insulators and have been used for pillows and upholstery. During WWI and WWII, kapok was used for life preservers and flying jackets, having since been replaced by synthetic fibers.

Cecropia—Ceremonial flutes are carved from the hollow stems of the large-leafed cecropia (*Cecropia peltata*)—a weed-like deciduous tree in its own family, Cecropiaceae, that grows quickly to over 60 feet tall. The giant (12 to 20 inches across), deeply lobed leaves are used as a tobacco substitute and as a tea infusion to treat high blood pressure and diabetes. Cecropia also produces a food attractive to Azteca ants; they form colonies in the trees, which provide them with some protection from strangling vines and from feeding herbivores, such as monkeys, toucans and bats. (The herbivores disperse their seeds.) Similar to red alder, cecropia is the first tree to reforest an area and is abundant along forest edges and in tree gaps.

Quamwood—Anyone who visits Belize during the dry season (February to May) will never forget the sight of quamwood (*Schizolobium parahyba*). During this time, the tall, deciduous member of the pea family (Fabaceae) loses its large, fern-like leaves and is covered with fragrant, bright-yellow flowers that shine like beacons in dense forests. Quamwood is named

Quamwood (*Schizolobium parahyba*)

for the crested guan, a slender bird approximately 34 inches long with a chicken-like beak and a bushy crest that feeds on its tear-shaped pods. Its buoyant timber is used to make dugout canoes and rafts for crossing flooded rivers.

Gumbolimbo—The gumbolimbo (*Bursera simaruba*) has beautiful, red, exfoliating bark and a comical name: Belizeans commonly call it the "tourist tree" because it "gets red and peels." Reaching over 80 feet tall and common in both primary and disturbed forests, its shaggy, red bark is reminiscent of the paperbark maple (*Acer griseum*) and our native madrone. Outer layers of tissue-thin, copper-red sheets peel away to reveal a smooth, bright-green, waxy inner bark beneath. Its constant shedding may be an adapted strategy for getting rid of unwanted epiphytes and vines.

The gumbolimbo is a member of Burseraceae, also known as the "frankincense and myrrh" family, which comprises about 540 species of flowering plants in tropical regions worldwide. The gumbolimbo's deciduous leaves have six to eight leaflets that are each two to five inches long. With a high content of tannin, the leaves smell like turpentine. The flowers are small, inconspicuous and largely pollinated by insects. The clusters of small, round, dark-red fruits are eaten by birds, monkeys and other indigenous animals.

The bark of the gumbolimbo provides an antidote to the painful rash brought on by the caustic sap of the poisonwood tree (*Metopium brownei*), a member of the cashew family (Anacardiaceae), which also includes poison oak and poison ivy. A piece of the bark rubbed against the wound provides pain relief and accelerates healing. The two trees are often found growing near each other.

Sapodilla—Although 1200 year-old sapodilla wood door lintels and supporting beams have been found intact at the Tikal architectural site in Guatemala, the value to North Americans of the sapodilla or chicle tree (*Manilkara zapota*) was not discovered until 1869, when the American inventor Thomas Adams realized that the gummy resin exuded by a punctured tree was a perfect base for chewing gum. Soon after his discovery, the Wrigley Company used the substance in the manufacture of Juicy Fruit and Wrigley's Spearmint gums, followed by the American Chicle Company, which created Chiclets candy-coated gum. The Maya used this gummy resin to fill tooth cavities in dental surgery.

For decades, resin collectors (*chicleros*) lived in damp camps deep in the jungle and made their livings by collecting sap from trees over 30 years old. Herringbone slashes were cut into the bark, and the dripping gum was collected in small, wax-lined bags. Later, the substance was boiled, distilled and pressed into blocks. Generally, each tree was tapped no more than once every six years. Today, many trees so tapped can be recognized by their zig-zag scars.

Logging of mahogany, logwood and sapodilla was the foundation of the British Honduran economy until the mid-twentieth century.

Strangler Fig—The strangler fig (the common term for several species of *Ficus*) is named for its propensity to envelop and eventually strangle its host tree. The strangler fig's tiny seed is deposited by birds high in the canopy, from which its long, adventitious roots grow downward to the ground, where they root and

LEFT: *Cecropia peltata* **RIGHT:** Strangler fig (*Ficus* sp.)

take nutrients from the soil. Once anchored, the roots thicken and begin to circle and bind the host. The crown grows foliage that soon overshadows the host tree, which dies.

The many openings in the trunk of the fig house thousands of invertebrates, small mammals, reptiles, amphibians and birds. Other species are attracted to the fig for its fruits, and they distribute the seeds widely, ensuring the tree's continued success.

A strangler fig's broken leaf or stem emits a milky sap that protects the plant from insects. Traditionally, this sap has been used to relieve burns and to treat skin fungus, ringworm and boils.

Bayleaf—For centuries bayleaf (*Sabal mauritiiforme*) has been the preferred palm for roof thatch, as it provides good waterproofing. Roofs made from the larger palmate fronds can last 25 to 30 years, if well maintained. Traditionally, it is harvested when the moon is full, as this is said to minimize the stem's susceptibility to insect damage.

Recently, it has become scarce owing to habitat loss and over-harvesting, partly because of the tourist industry's demand for authentic, rustic-looking thatched huts. (Eco-friendly lodges, such as DuPlooy's Jungle Lodge, which houses the Belize Botanic Gardens in western Belize, use tile instead of thatch for roofs.) As an alternative to its collection from the wild, bayleaf is currently being evaluated for its potential as a sustainable agricultural crop.

The cohune (*Attalea cohune*) is a taller and statelier palm than the bayleaf. Especially abundant in disturbed areas, the cohune was one of the most important trees in Maya culture because of its many uses. The sight of cohune will become familiar to visitors, but they might not know that cohune oil is what gives Belizean dishes their distinctive flavor.

Give-and-Take Palm—Possibly the most menacing looking tree encountered in the forests of Belize is the give-and-take palm (*Cryosophila stauracantha*). The downward pointing, needle-like spines armoring the bark are up to three inches long and can cause painful, stinging cuts that can become infected from a mold growing on the underside of the thorns.

That's the "take" part of the name. The "give" part comes from the antidote to the wound, a sticky, pink, cotton-like substance found beneath the palm's upper bark. When applied to a fresh wound, the substance staunches the bleeding, helps anesthetize the pain and prevents infection.

Once stripped of their thorns, the long

Continues on page 29

IslandWood: A School in the Woods

By Katie Boehnlein

It's Monday morning on Bainbridge Island, Washington. The commuters have departed on their morning ferries to Seattle, and the waters of Puget Sound are still. Locals walk to the grocery store, and visitors peruse the quaint shops. Ten minutes away from the ferry dock, however, lies a secret and magical place that is tucked away in the woods and far removed from the beaten path. This place is IslandWood, a 255-acre complex of forest, marsh bog, shoreline, ponds and state-of-the-art learning facilities that exists for one reason only: to teach visiting schoolchildren and adults about the natural environment. IslandWood is a place of wonder —a fully staffed environmental education center with the goal of providing students and adults with hands-on learning experiences, while inspiring in them a life-long commitment to environmental and community stewardship.

School children from Seattle and many of its surrounding areas have the opportunity to visit IslandWood on a four–day, overnight, outdoor education program—one of the few available in the Puget Sound area. Founders Paul and Debbi Brainerd were inspired to start planning the creation of IslandWood in 1997 after learning that half the students in the Seattle public schools system did not have the opportunity to engage in outdoor education programs. The state of Washington had declared environmental education mandatory in 1990, but no funding had been supplied to support programs.

Almost 15 years later, the Brainerd's dream has become a thriving reality. In its nine years of operation, more than 4000 students from

Three happy campers participate in outdoor classes. (Photographs courtesy of IslandWood)

over 70 schools in the Puget Sound area have participated in IslandWood programs, and over 5000 community members have visited the campus through community events, conferences and leadership programs. Learning comes alive each week at IslandWood by blending inquiry-based science education with exposure to cutting-edge technology and opportunities to engage creatively in the arts. The School Overnight Program, which gives students the freedom to explore their own natural connections to the outdoors, delivers experiential, "hands-on" education in outdoor classrooms.

IslandWood is truly a "school in the woods," as its motto suggests; its programming integrates the student with the environment in innovative ways. Each visiting student, for example, is given a private bunk with an individual window looking out into the forest; this set-up allows every student to take ownership of his or her experience in exploring a place that is so different from home. Kids learn about the behavior of native animals, the circle of life, and the interconnectedness of ecosystems in a scientific, technological and artistic manner through use of microscopes, storytelling, drawing and other integrative methods. Instructors also provide the space for students to learn on their own. This inventive approach to pedagogy encourages teamwork, respect, community and trust—qualities that grow and develop throughout the week.

One of the experiences offered during the Overnight Program is called "Dirt to Dinner." IslandWood boasts a fully functioning children's garden that allows students to experience the food cycle from beginning to end. Gina Glowen is a part-time garden educator at IslandWood and also a graduate of IslandWood's Graduate Residency Program entitled Education, Environment and Community (EEC). Gina works with the students in the "Dirt to Dinner" program, which she cites as an "incredible learning experience."'The kids come to the garden," she says, "to learn about ecosystems as a whole, but they come away with a holistic understanding of where their food comes from. They get to see it, to get their hands dirty, and to see what it is like to grow things to eat." It is often a revelation for kids to learn that their food comes from plants because so much of food consumed in America is processed and far removed from its living essence. Expressions such as, "We're eating plants?!" are normal in the course of this program. But the kids' disbelief quickly turns to a sense of empowerment, as they learn about how to grow the food they eat. Family-style eating takes place at dinner—when students are told to take only what they can eat and to share with others at the table. Holistic programs such as "Dirt to Dinner" demonstrate IslandWood's dedication to teaching the value of community and making respectful connections with each other and the environment.

Experiential Classrooms

The diverse habitats at IslandWood serve in themselves as experiential classrooms: The secondary-growth forest houses raccoons, black-tailed deer, mink, red-legged frogs and banana slugs; the sphagnum bog is overrun with wetland plants, including a carnivorous plant called the sundew; the cattail marsh provides students with the opportunity to observe macro-invertebrates; common Pacific Northwest evergreens and deciduous trees can be studied from a suspension bridge spanning a forested ravine; and Blakely Harbor and its estuary teem with plankton and other marine life, providing multiple teaching opportunities.

The IslandWood facilities and campus were designed with help from fourth-, fifth- and sixth-graders, whose ideas for "floating" classrooms, interconnecting trails, a suspension bridge, a structure to observe the forest canopy, and several treehouses, were all integrated into the final design. Architects from Seattle-based Mithun and the Berger Partnership put such careful thought into the design and construction that Denise Dumouchel, director of

Graduate Programs at IslandWood, says of the facilities, "The buildings themselves teach."

IslandWood programs offer learning experiences that contrast with typical classroom education. Most students who participate in IslandWood programs attend schools in Seattle's inner city; many may never have ventured outside of the city, and some have never been in a forest or seen creatures in the wild, except on television. John Haskin, Director of Education at IslandWood, is always amazed at the reactions of children when they arrive there. As the yellow school bus pulls into the driveway on a Monday morning, tree branches almost immediately envelop the vehicle. The students gaze wide-eyed out the window, transfixed by the calm and serenity. John says that as the students step off the bus, some go completely quiet as they stand below towering trees, looking up in awe. A few students walk up to the trees with hands outstretched, hesitantly making contact with the bark. "Are these trees real?" they seem to be saying.

This is the simple power of IslandWood: to give urban kids the opportunity to explore the natural world and allow them to experience the wonders of the environment around them. Because our world is becoming increasingly technological, metropolitan America, in particular, provides few opportunities for kids to engage with the living environment. Although life is fast- paced in a city like Seattle, promoting physical activity outdoors and encouraging free, creative play are not stressed as much as they were at one time. Recess, for instance, is being cut in some schools for economic reasons, and to provide more classroom time to boost schools' standardized test scores. By enjoying the space and freedom to explore IslandWood, students are able to learn in an active way that is naturally appealing: through hands-on experience. Even though they are not learning at IslandWood about the natural environments of their own communities, students are encouraged to carry back home the lessons they have learned there.

The Seattle school system has embraced IslandWood's work. Schools across the city and beyond have joined together to make sure their kids can experience IslandWood's programs every year. In turn, IslandWood's staff is dedicated to maintaining relationships with each school that participates in its programs. In fact, each year a majority of the teachers who work at IslandWood are working simultaneously on masters degrees in Education at the University of Washington through IslandWood's Graduate Residency program. These graduate students are, most often, the links between IslandWood and the surrounding communites. Denise Dumouchel stresses the importance of this connection between her graduate students and the visiting schools. She says that the commitment IslandWood makes to support the teachers and schools that integrate their experiences at the School Overnight Program into existing school curricula is a unique element of IslandWood's programming. This support includes providing materials, sending liaisons from IslandWood to the classrooms before and after the school kids' visit, and providing support for community projects at these schools.

Kids will gain a new self-confidence after their experience at IslandWood. Their inherent curiosity leads them to notice the intricacies of the new world around them; they learn by smelling clean air, hearing the hoot of an owl, touching and tasting fresh food, and encountering a world apart from cars, blacktop and tall buildings of the city. These experiences inspire and empower them to pass on their new knowledge to peers, family and friends once they return home. Gina Glowen is inspired by her job as a garden educator every day. "It would be easy to go home to Chicago and make a lot of money in a different profession," she says, "but I came here to work with kids away from big-city life…it really is a magical place."

Christina Doherty, community programs educator at IslandWood, shares the same

LEFT: A class of fifth graders learns about composting in the garden greenhouse at IslandWood. Hands-on learning experiences are a key component in the Islandwood curriculum. **RIGHT:** Dip-netting for macro-invertebrates.

feelings: It is the community of people that are attracted to visiting and working at IslandWood that keeps her coming back here to work day after day. Adults, as well as children, are welcome; on designated weekends throughout the year they are given the opportunity to explore the campus and participate in educational opportunities. (See www.islandwood.org/events for up-to-date information.)

IslandWood was built to allow people to connect—to themselves, to other people, and to the outside world. The facility's visitors are surrounded by practical and real lessons in how to live responsibly within the natural world. The facility itself is a living example of energy conservation through its composting and recycling programs and its use of alternative energy sources—all of them elements that help maintain the integrity of the site and demonstrate its educational mission. The sense of excitement humming through the air at IslandWood is contagious: Tucked away in the forest underbrush of Bainbridge Island, it reveals to us the possibilities for living consciously and harmoniously with the Earth that sustains us.

Many thanks to IslandWood staff, in particular Denise Dumouchel, director of the Graduate Program; Christina Doherty, community programs educator; and Gina Glowen, garden educator, for contributing their time and knowledge to this article.

For further information on IslandWood, visit islandwood.org.

Katie Boehnlein is a senior at Seattle University, where she studies Environmental Studies and English. After she graduates in June 2010, she hopes to take a year off to travel and do service work before she begins her graduate studies in Environmental Education.

During 40 years, a Seattle family has transformed a steep slope overlooking busy Interstate-5 into "a touch of Eden in a big city."

Plants Who Do Their Share of the Work

By Ann Streissguth

An excerpt from "In Love with a Hillside Garden," by Ann, Daniel, and Benjamin Streissguth, published by University of Washington Press, 2009, in association with The Arboretum Foundation, Seattle.

One of the steps we've taken in taming our garden's hillside involves the early use of plants that reproduce freely and with great abandon. Clearing out undesirable plants is fruitless if the open spaces aren't soon filled with plants chosen to sustain the gains made and reduce the rate at which the weeds return in subsequent months and years. Several types of plants have been most useful as we've forged our way across the hillside, path by path: plants that are prodigious seed producers, whose seeds germinate easily in the Seattle climate, and whose seedlings are not overwhelmed by weeds; plants that grow

ABOVE: *Iris unguicularis* (Photographs by the Streissguths, unless otherwise noted)

easily from cuttings that can be tucked in here and there in rock crevices or along the woodland paths; and plants that spread spontaneously from rambling roots, underground runners or self-dividing bulbs.

We recognized the value of the money plant and feverfew as they emerged spontaneously on the hillside when the thickets of blackberries were first cleared. Money plant was already growing abundantly on the wild hillside, cohabiting with English ivy under the canopy of the old maples. This is truly a plant for all seasons. We enjoy the vigorous, pointed, green leaves of the first-year seedlings, bravely raising their heads above the ivy cover, as well as the bright-purple spring flowers of the second-year plants competing handily with other flowers requiring ten times their care. Finally, in their maturity and final demise in the autumn of their second year, their lovely translucent seed membranes hang like tiny moons from their branching arms, gradually blessing the surrounding earth with their promise of life. After the seeds are spent, and before the ravages of the winter rains begin, what lovely, long-lasting bouquets this money plant makes; what luminous ghosts the remaining plants become in the woods in winter, gradually giving way to the next crop of first-year seedlings.

Feverfew, though more conventional in habit, is another favorite. Seemingly impervious to our Seattle seasons, this plant germinates throughout the year so that young plants with their tiny, white flowers provide soft, feathery drifts across swaths of hillside and along garden paths in spring, summer and fall. The spent plants are easily uprooted, and the seeds shake naturally from the plant while we walk along the woodland paths. Feverfew grows with such profusion, yet is so easy to control that it makes an excellent "first pass" planting in areas that will, after taming, be receiving more difficult plant materials.

Rose campion—with soft, silvery leaves and bright-cerise flowers—is another old friend who has helped us tame the woods. These biennials prefer the sun, but they are freely seeding and spreading and can also be sown directly from uprooted plants in autumn. Although friends keep giving us the white variety, it seldom multiplies for us like the cerise form. Foxglove is another prolific seeder. Its scale is perfectly suited to a large wooded hillside like ours, and the lofty spikes contain dozens of tightly packed, hanging trumpets that are perfectly shaped for children to wear on their fingers like gloves. These flamboyant giants place themselves here and there on the hillside, sometimes growing in the ivy, other times along the paths. Foxgloves can generate profound thoughts as you contemplate the miracle of reproduction they represent, by growing from a seed the size of a period to a strapping plant of seven feet in only two seasons. We particularly enjoy the many different colors that emerge in each year's family of foxgloves. From darkest mauve to palest pink, and even pure white, they grow elegantly throughout our hillside...

Several types of plants reproduce readily by cuttings, which can be pinched off either in early spring or when the fall rains begin. These have been of great help in bringing winter and spring color and form to the hillside gardens. Some of our favorites are the groundcovers that bloom with the spring bulbs. Fifty feet of planting beds in the retaining structures under the caning berries were planted with pink and lavender aubrietia, snipped from existing garden plants. We treat arabis the same way, often pinching off bits and tucking them into rock walls as we walk along the garden paths with friends. Old-fashioned dianthus, soft pink and rose helianthemums (*Helianthemum* 'Wisley Pink', *H. nummularium*), and low-growing, white rockrose are all plants that are easily started by cuttings set straight into the garden after the plants bloom, when a heavy clipping back can sometimes produce a second burst of late summer flowers. (Some discretion in water and shade is necessary if this is done

in the heat of summer.) Winter jasmine produces a tangled web of stiff, bright-green vines that is particularly useful in steep hillside areas with poor sandy soil. This plant grows effortlessly from twigs stuck into the ground in autumn. The following year—after the leaves are gone—small, brilliant-yellow, single flowers appear, their fresh faces producing tiny surprise bouquets in midwinter.

Equally useful are the groundcovers that spontaneously form large clumps. These can readily be divided to produce broad swaths of spring bloom or to give to friends. Large beds of *Primula vulgaris*, after several seasons of initial weeding, now stave off many weeds singlehandedly while simultaneously producing showy displays of cream or yellow, depending on their destiny. Larger plants, such as astilbe and our several perennial geraniums (*Geranium himalayense*, *G.* 'Johnson's Blue'), also dampen weeds and bloom vigorously in early summer.

Finally, there are the plants that reproduce themselves with absolutely no work at all on the part of the gardener, beyond planting them in the right spot. Our lovely, clear-yellow oenothera, which languished in our shade garden, perked up immediately and spread itself across an entire hillside once we moved it into the sun. This *Oenothera fruticosa*, like our native fireweed, spreads underground with rapidly extending roots. It is moderately invasive but not as free ranging as fireweed. The tight mass of leaves and roots produced by *O. fruticosa* is particularly useful in weed control. Another plant, leopard's bane, is not a bane to gardeners; it also spreads happily in space available, keeping weeds and ivy at bay and sending up abundant, two-foot stalks of large, bright-yellow, nodding flowers. Lily-of-the-valley, so fragile-seeming in early spring, is another rampant spreader that can be useful in some spots but a problem in others.

Hillsides as large as ours can even accommodate a lovely patch of fireweed, especially when it cohabits successfully with ivy to

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produce a mass of summer color. We attempted many times to bring fireweed seeds—with their soft, downy covers—home in our pockets from mountain hikes. We'd release them to float through the woods, but they never "took." One day, to our great surprise, we found a tiny fireweed plant growing spontaneously in a flowerpot at the house of some friends. They happily gave us the plant and pot, and we carefully transplanted our fireweed baby to a sunny spot in the woods just as the rains began. This became the founding father of a little plantation of fireweed that is a pleasant surprise in a city garden. Gooseneck loosestrife is another busy spreader, rampaging through our summer perennial bed adjoining the oval—a bed it is supposed to be sharing with liatris, filipendula and monkshood.

Iris, of course, are also wonderful spreaders, but the bearded hybrids require much time and effort in resetting to avoid the spreading masses of tangled tubers that soon decrease bloom. We are now experimenting with some old-fashioned varieties, the kind we see growing in huge clumps at abandoned houses in Sicily, blooming their heads off with no care at all—and no dividing, even years after the last resident has left the premises.

ABOVE: Rose campion (*Lychnis coronaria*). **INSET:** Foxglove (*Digitalis purpurea*). (Photograph by Will Austin)

Several types of bulbs also fall into the category of plants that reproduce easily from seed or by producing a profusion of bulblets. Earliest in the spring come the snowdrops—first the sturdy *Galanthus nivalis*, then *G. elwesii*, which years ago we began planting in little clumps of six or eight. After several years, they began multiplying vigorously, drifting downward in cascading carpets of white on sunny slopes where they open surprisingly around Valentine's Day. Unlike many other earliest flowering bulbs that hug the ground, snowdrops hold their little bells on dainty stalks that let them dance in the passing breezes.

Early winter aconite is also self-seeding, but in our garden it grows best in flat places and doesn't like being disturbed. After a number of years, when the plants mature, they begin spewing seeds all about them. It takes three to four years for the new seedlings to begin flowering and gradually create an ever-expanding patch of yellow, as bright as a shaft of sun in February. Numerous child visitors to the garden have marveled with us at the successive, age-related examples of *Eranthis* genealogy visible in late spring and summer: First-year seedlings are the dicotyledonous, with two opposing leaves; second-year offspring have a small ruff of lacy, green leaves; by their third year, they are sturdy adolescents with large, encircling, green ruffs ready for next year's flowers.

The spring-blooming *Crocus tommasinianus* produces huge drifts of pale, silvery-violet, translucent flowers in late February. They reproduce by corm divisions but also by a burst of seed from a substantial shaft that first appears among the grassy leaves after the flowers fade. In the warmth of early summer, the leaves die back to fully expose the seed shaft, which drops large, pale-tan seeds around itself to form tight clumps of new seedlings—a convenient spadeful to move to another location in the garden or for a visitor to take home. Eventually growing together into impressive, seamless drifts, these

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species crocus don't mind being disturbed. In fact, they often begin colonizing a whole new area of the garden from a single bulb or two that hitchhikes to another part of the garden when another plant is moved...

The small species *Cyclamen hederifolium* produces a textured carpet of dappled leaves most of the year, which gradually dies back in the heat of summer. When the first rains come in early autumn, perky, bright-pink and occasionally white flowers bloom from large corms that look like slabs of old leather lying atop the surface of the earth. The corms not only continually increase in size themselves but also produce an increasingly large number of flowers that set their seeds in fat pouches perched on the end of tightly coiled springs. In early spring, before the dappled leaves appear, the springs release, the pouches burst, and the seeds are ejected in all directions across the surrounding territory.

Wallflowers, linaria, Welsh poppy and larkspur are all useful easy-seeders on the hillside, varying immensely in virility and adaptability. Our favorite violets include *Violet labradorica, V. sororia* and *V. tricolor.* Wallflowers are just plain comfortable to live with. They come in a broad range of rusty-brown to yellow hues, spontaneously set themselves into crevices in rock walls that no other seeds will attempt, and reward all passersby with their sweet spring perfume. Wallflowers, like linaria and violets, seed in easily, but are also easy to weed out...

Larkspur, like feverfew, germinates at many different times of the year, as long as she gets some moisture. Her clear-blue flowers are among the truest blues in the garden, though she doesn't compete well with other plants and is rather a free spirit, seldom returning where she last was seen. You must be careful to gather seeds every year (so you can get this plant

ABOVE: *Cyclamen hederifolium*

started again if she didn't like where you put her last year). I snip off the seed heads just as they're ready to open, then I let them finish drying inside, in a pie tin, as the seed is quick to disperse when ripe and won't germinate if it falls into a dense cover. When the seed is dry, I winnow off the chaff by blowing lightly across the top of the tin until only seeds remain. As with all my seeds after winnowing, I store them without further fuss in long envelopes with name and year—ready to distribute along the garden paths when conditions look right, or to give to visiting gardeners.

For me, individual plants, with their unique characteristics and idiosyncrasies are the lifeblood of the garden. I marvel at their biological strengths and weaknesses as well as their beauty and scent. I shamelessly evaluate their acceptability based on how well suited they are to our needs as we develop and maintain this acre of hillside garden. Can they help us control the weeds? Can they reproduce themselves sufficiently to be visible in such a garden? Can they co-exist with the other plants we also love? What part of the year will they dominate a particular bed, and how will that time dovetail with the demands of other plants? How well will they withstand the range of weather conditions they may face?

There are many gorgeous plants in our garden—with flowers that are paragons of form, scent, color and beauty—but some of the plants dearest to my heart are those that are truly our gardening partners, doing their share of the work. ~

Ann Streissguth is professor emerita at the University of Washington School of Medicine.

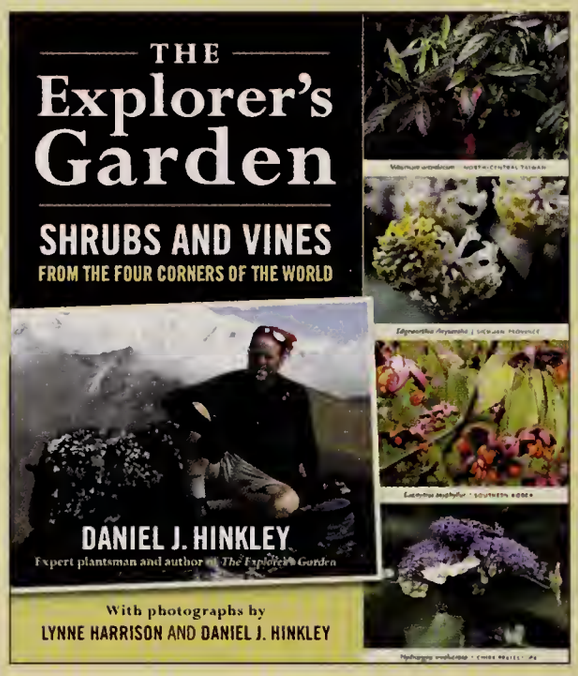
Streissguth Gardens, now part of the Seattle Parks and Recreation Department, is located on the northwest slope of Capitol Hill, adjacent to the East Blaine Street public stairway.

A New Book From Dan Hinkley

By Walt Bubelis

The Explorer's Garden: Shrubs and Vines From the Four Corners of the World

I knew this book was trouble as soon as I began perusing the copy I was buying at the University Book Store. I immediately was engrossed by Dan's engaging writing about plants that I already know; he writes equally well about others I have never heard of before, such as *Ovidia* or *Rhodoleia*. I find I always learn something new while reading Dan's work, so acute are his observations concerning his plant travels and his own gardening experiences.



I think there is good to be had in reading about plants that you have never heard of before. As with good fiction, you enter a new world. When visiting gardens or arboreta, I especially enjoy encountering a new plant that I have only read about before, perhaps in such volumes as this one. Dan likewise feels happy to come upon a plant previously only known to him in print—a feeling he alludes to in the book.

There have been many famous plant explorers, and some of them are immortalized in scientific epithets: Think of *Magnolia wilsonii, Acer pectinatum* ssp. *forrestii* and *Juniperus squamata* 'Meyeri', for a start. In the past, some of these explorers have written about their travels and plant discoveries. To the delight of many modern readers, contemporary plant explorers are continuing this writing tradition, among them Peter Cox and Peter Hutchinson in "Seeds of Adventure: In Search of Plants" and Roy Lancaster in "Travels in China: A Plantsman's Paradise." But where these volumes stand mainly as travelogues of their authors' collecting trips, Dan's new book interweaves accounts of his plant discoveries with passages concerning his attempts to grow the plants he has collected. For those readers who miss his witty, succinct plant descriptions found in the catalogs of the original Heronswood Nursery, these write-ups will similarly whet your appetite for plants you have never before considered and may not have room for, but now will want to try anyway. An excellent list of nurseries at the end of the volume will help satisfy any such cravings.

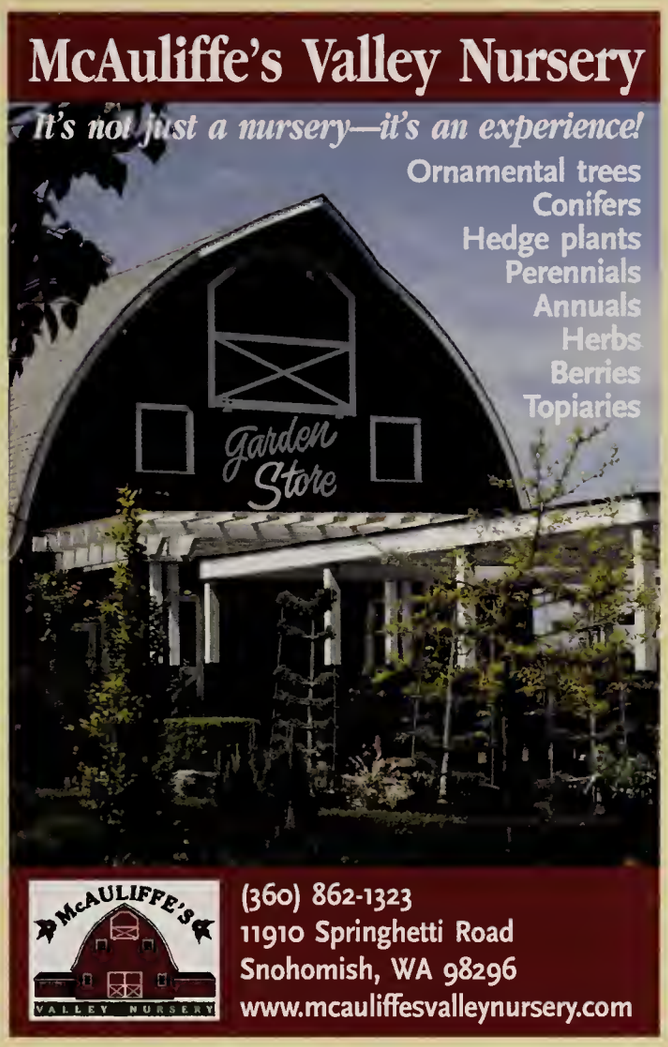
Dan always considers how to integrate into landscapes the "wild" plants he discusses. What better way to honor a foreign plant's native ecosystem—"its rightful place," in Dan's words—than to introduce it into your own garden? I rejoice in his invitation to propagate

these plants, even if it means dumpster diving (which Dan did once, to retrieve a rare cutting that had been carelessly discarded). During the time I have known him, Dan has always felt that all plants, especially the rare ones, should be shared and disseminated by gardeners. This said, he is cautious about an introduced plant's potential for becoming invasive in a new setting.

I like the way Dan discusses familiar genera together with associated genera that are found in the wild. Both require similar growing conditions, so a reader who already knows the requirements of a familiar plant can ensure its wild associate will be planted in the correct environment when added to a cultivated landscape. Readers also can emulate in their own gardens the successful plant combinations Dan has observed in the wild and described here.

Advice on hardiness is often given with Dan's typical adventuresome spirit. Most of the plants covered in this volume are for USDA zones 7 and above. So it was a pleasant surprise, while reading Joe Eck and Wayne Winterowds' latest book, "Our Life in Gardens," to read how generously Dan shared some of his hardier plants with these gardener friends who live in Vermont (Zone 4). Regarding the subject of hardiness, there is a detailed discussion about climate limits in "Rare and Unusual Perennials," the first volume in this series.

Dan gracefully keeps you abreast of the latest taxonomic revisions, some of which are startling. *Aucuba* and *Garrya* now are compatriots in the dogwood family, for instance! For anyone having learned plant families earlier, these changes present new challenges to one's memory. Dan takes it in stride even as *Acer*, the focus of his master's thesis, is shifted from Aceraceae into the Soapwort family, the Sapindaceae. Regarding other plant names, he would prefer to keep the older term, *Mahonia*, rather than using *Berberis*. He is also brave enough to wade into the tortured taxonomy of various plants, such as



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the sterile and fertile forms of common *Hydrangea* and *Viburnum*.

The chapter on Hydrangeaceae shows Dan's ample powers of comparative observation. Seeing plants over the years, and in the extreme locales of their range, has given him a unique capability to select the very best ones for different landscape uses. In the past 50 years, the state of knowledge about this and other groups has exploded with new discoveries. I hope Dan will apply his future field research toward a much-needed update on this genus and others.

Most of the plants discussed here have photographs that are sited in the book near their prose descriptions. With a few exceptions of shots taken under trying field conditions, they are of high quality. Most are Dan's own, with impressive contributions by Lynne Harrison that often reveal the inherent artistic qualities hinted at in Dan's prose.

Examples of wry humor abound in this book. I will have to recycle in my classes, with due credit, of course, Dan's recommendation of *Clerodendrum* as useful in gardens about to be sold—a reference to their propensity to sucker. His way with words is always a delight even as he sends one to the dictionary to look up terms such as *kickshaw, knackered* and *tergiversations*.

The scope of this book is remarkable, even as Dan admits to ignoring whole genera such as *Rhododendron, Lonicera* and *Hypericum*, to name but a few. Some of these are amply covered already by others writers, while some do not yet seem to be of interest to Dan. I suspect that his and his partner Robert Jones' new garden, Windcliffe, is a pivotal point of reference for Dan: If a plant could be grown there and would add to its ornamental qualities, then he feels it is worthy of collection. Fortunately for us, these criteria encompass a vast number of garden-worthy plants.

This book records trips taken with many friends and horticulturalists, ranging from the writer Jamaica Kincaid to the eminent Welsh nursery owners Bleddyn and Sue Wynn-Jones. Territories of exploration range from North, Central and South America to South Africa, Australia, New Zealand, Europe and Asia. About the only major area not yet covered by Dan is Russia and its former satellite countries. I imagine he's biting at the bit to get to the Kamchatka Peninsula, for one.

What you will find here is a remarkable assortment of genera, including the spiny *Colletia*; the purple-fruited vine *Billardiera*; *Edgeworthia*, which is not only a source of paper fibers but intriguing for its fragrant, yellow, ball-shaped blooms in winter; and Pacific Northwest species such as *Garrya* with its winter tassels. Great depth of information is provided on such groups as the hydrangea family and *Mahonia*. Other attributes of plants are discussed, such as their edibility (or lack thereof), their fragrances and their native uses. All in all, this is a delightful book on whatever level you approach it. I find it heartening, too, that so may new plants still are being discovered.

Hinkley, Daniel J. "The Explorer's Garden: Shrubs and Vines from the Four Corners of the World." Portland OR: Timber Press, Inc., 2009.

Walt Bubelis has known Dan Hinkley for over 25 years, including time they spent as colleagues at Edmonds Community College. Walt has taught horticulture at Edmonds Community College since 1971 and currently is head of the Horticulture Department.

"Bulletin" readers who enjoyed "Careless Grace: The Gardens of Lord & Schryver" in the Spring 2009 issue will want to attend this day-long program sponsored by the Lord & Schryver Conservancy.

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slender trunks make excellent, long-lasting poles for the walls of rural houses and thatched-roofed, open-sided *palapas*.

Red Mangrove—The cays and coastal areas have their own unique plant communities. Among the most noticeable woody plants are the salt-tolerant mangroves. Red mangrove (*Rhizophora mangle*), which encircles many of the islands, has reddish-brown bark and dark-green, leathery leaves. It is easily identified by its complex, sprawling "jungle" of stilt roots and lower branches that form a nearly impenetrable thicket. The raised roots provide not only support, but also aeration. By stabilizing their surroundings, mangroves create an environment in which other plants and animals can survive. Parts of mangroves have been used as medicine for many medical ailments, including angina, asthma, diarrhea and dysentery.

Caribbean Pine—One of the few conifers in a sea of broadleaves, the fast-growing Caribbean pine (Pinus caribaea var. hondurensis) is the one, true tropical pine found in Belize. Most abundant on nutrient-poor, sandy soils, the Caribbean pine reaches 100 feet in height, and its resin is used locally as an adhesive and burned as an insect repellent. Although it covers some 80 percent of the protected forest reserve of the Mountain Pine Ridge area in the Cayo region of western Belize, it was devastated by Hurricane Hattie in 1961 and, more recently, by infestation from the southern pine bark beetle. The devastation was so extensive that millions of pine seedlings have been planted over some 90,000 acres. Reforestation efforts and natural regeneration suggest that the forest eventually will recover.

Conclusion

At a time when botanical diversity is being lost and rainforests are being destroyed at a staggering rate, it is a joy to visit Belize and its amazing array of trees. With close to half of Belizean lands under some kind of legal protection, it is among the most conservation-conscious countries in the world.

Eco-tourism has become a friend to habitat preservation, as tourists interested in the natural world and indigenous cultures provide an economic incentive for conservation. Institutions such as the Belize Botanic Gardens and Belize Zoo showcase indigenous plants (and animals), raising awareness of their importance to Belize and the planet.

Still, Belize is not without challenges, as it has a deforestation rate of 2.3 percent owing to, among other factors, development, climate change and the recent discovery of crude oil. Some of the trees that have played significant roles in Maya culture are endangered because of over-harvesting by those who have exploited these valuable resources. With careful oversight, these trees might regain their place in the ecosystem.

From my vantage point in Seattle, at latitude 47, the tremendous diversity of life in this small, subtropical country is a treasure. ~

Janine Anderson, CPH, is a landscape designer (www.anderson-design.net), long-time Arboretum guide and member of the "Bulletin" Editorial Board. This winter, from February 28 – March 10, 2010, Janine will co-lead a trip to Belize that focuses on its flora, fauna and cultural history. Contact Janine for more information.

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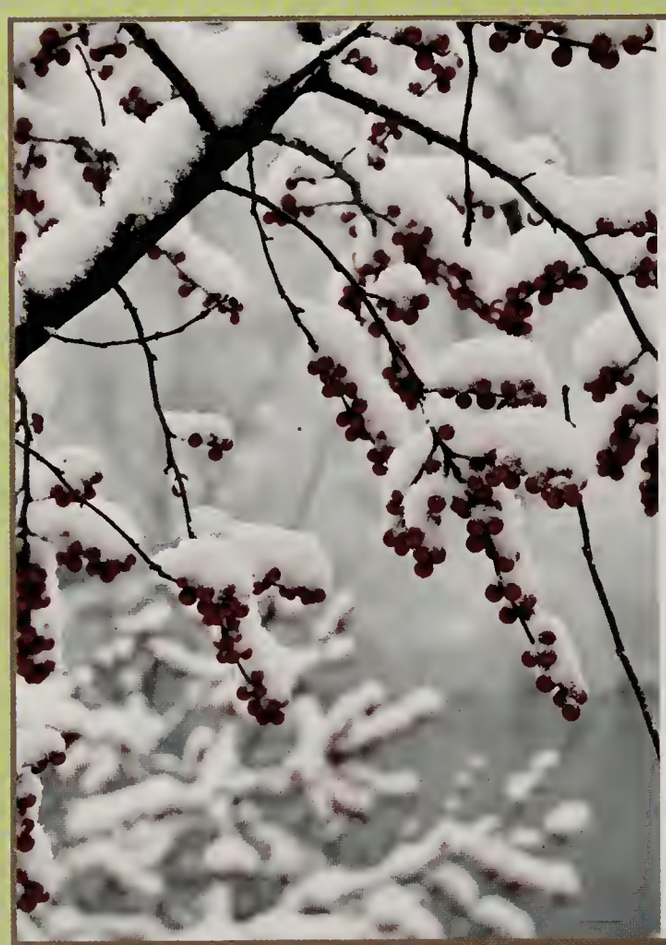

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